REMARKS

The Applicant thanks the Examiner for indicating that claim 15 is objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claim(s). In accordance with this indication, claim 15 is appropriately revised, to be independent and this amended independent claim is now believed to be allowable.

The drawings are objected to by the Examiner for the reasons noted in the official action, e.g., the failure to show in the drawings each feature specified in the claims. More specifically and apparently referring to FIG. 2, the Examiner states that the language in claim 7 reciting that "the flow diameter gradually diminishes in the flow direction" is not supported by the drawings.

Upon review of the specification and the drawings, the Applicant concurs that the language in question in claim 7 that the flow diameter gradually diminishes in the flow direction is not supported by the specification or drawings. Paragraph [013] of the specification, for example, states that the flow diameter is graduated so that stationary flow always prevails in the nozzle according to the principles stated in paragraph [014]. Paragraphs [022] through [027], in turn, describe that the interior diameters of the nozzle, that is, the cross-sectional flow diameters 9 and 10, are diminished between successive oil jets 5 and 6 according to the continuity equation principle described in paragraphs [024] and [025] to avoid unwanted effects between the successive oil jets and to thereby provide the appropriate flow volumes from the successive oil jets. This description is supported in the drawings and, in particular in FIG. 2, wherein it is shown that the interior diameters of the nozzle are successively diminished in the direction of flow and between successive oil jets. It is also noted that while the diminishments in the interior diameter of the nozzle are shown as sloping, the illustrated slope by which the interior diameter of the nozzle is diminished is at least arguably not "gradual", depending on how the term "gradual" is defined.

As such, the language of the claims is suitably amended and, in particular the language of claim 7, to address and overcome this issue so that the language of the claims is now in accordance with and fully supported by the drawings. It will be noted that these amendments to claim 7 are fully supported by the specification and the claims as originally filed and do not add any new subject matter to the specification or claims. The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw the objection to the drawings under 37 CFR 1.83(a).

Next, the Examiner rejects claims 7-14 and 16, under 35 U.S.C. § 103, in view of JP `459 and Gazewood `566. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

First individually considering the teachings of JP `459 and Gazewood `566, as the Examiner states, FIG. 10 of JP `459 shows a multi-jet nozzle for providing fluid to the belts of a CVT transmission. JP `459, however, does not show or suggest the present invention which is directed to the interior structure of a multi-jet nozzle for providing fluid to the belts of a CVT transmission wherein the interior diameter of the nozzle diminishes between successive jets according to the continuity equation principle, which states that the product of the flow rate and cross-sectional area at each successive cross-section is constant to thereby avoid swirling of the oil in the nozzle with the consequent interference between successive jets and uneven distribution of flow between the jets.

Instead, JP `459 merely shows the nozzle externally as comprising a single tube having two jets extending therefrom and does not have any teaching or disclosure pertaining to the interior structure of the nozzle. In fact, it appears that FIG. 9 of JP `459 relates to FIG. 10 of JP `459 by showing a side view of the nozzle while FIG. 10 shows an end view of the nozzle. If this assumption is true--and there is nothing to indicate that this is not the case--it clearly shows that the JP `459 nozzle is merely an example of the type of prior art nozzle that is discussed in the Background of the Invention of the present Application and that is explicitly

distinguished over by the present invention due to the problems associated with the JP `459 type of nozzle.

It is, therefore, the position of the Applicant that for the above reasons, JP `459 has no teachings relevant to the present invention and is merely an illustration of the prior art that is explicitly distinguished over by the present invention. The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw all rejections of the claims, under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103, in view of JP `459.

Turning now to the teachings of Gazewood `566, this reference describes a "pig" to be passed through a pipeline to remove corrosion and deposits from the interior of the pipeline by jetting a mixture of a cleaning agent and a power medium against the interior wall of the pipeline. The Gazewood `566 device comprises a generally cylindrical interior member connected from a hose and having a large number of venturi nozzle passages, connected between an interior bore and the outer surface of the cylindrical interior member, so that the cleaning agent is propelled through the interior bore and out the venturi nozzle passages by the power medium at an enhanced velocity due to the venturi effect of the venturi passages.

The device further includes an outer sleeve that encloses the interior member to form an interior annular space, between the outer sleeve and the interior member, that includes a large number of holes of two types. The first set of outer sleeve holes are referred to as "throats" and are located opposite the venturi nozzle passages in the interior member so that the high pressure jets of cleaning agent and power medium can pass through the interior annular space and the outer sleeve throats and impact the inner wall surface of the pipeline, thereby dislodging any corrosion and deposits from the inner wall of the pipeline. The second set of outer sleeve holes, referred to as "recirculation ports", are larger than the throats and allow the mixture of cleaning agent and power medium to recirculate from the outer annular space between the outer sleeve and the inner wall of the pipe and back into the inner annular space between the annular sleeve and the interior member. The recirculated mixture of cleaning agent and the power medium is then reincorporated into the flow of cleaning agent

and power medium from the inner annular space to the outer annular space to be reused in removing any corrosion and deposits from the inner wall of the pipeline.

In rejecting the claims, the Examiner notes that the interior diameter of the bore in the inner member decreases towards the forward end of the device and that there are venturi nozzles located in both the wider and the narrower portions of the bore. For a number of reasons, however, the Applicant respectfully disagrees with the Examiner's interpretation of this structure as rending the present invention obvious.

First, it must be noted that the interior diameter of the nozzle of the present invention diminishes between successive jets and diminishes according to the continuity equation principle, which states that the product of the flow rate and cross section area at each successive cross-section is constant to thereby avoid swirling of the oil in the nozzle with the consequent interference between successive jets and uneven distribution of flow between the jets.

It must also be noted with respect to Gazewood `566, however, and in direct contrast from the present invention, although there is a diminishment of the interior bore of the interior member, the interior diameters of the interior bore of the inner member are each constant over a large number of venturi jets. That is, the interior bore of the inner member does not diminish between successive jets, as recited. As a consequence of this, the flow of fluid in the inner bore of the Gazewood `566 device will suffer from the same problems that are discussed in the Background of the Invention of the present Application with regard to lubrication jets for transmissions. That is, the flow out of successive jets will cause swirling of the fluid in the bore and uneven distribution and flow of the fluid out of the jets.

In addition, it must be noted that Gazewood `566 does not even mention this type of problem of the continuity equation principle of fluid flow in and out of a bore, and instead discusses only the venturi effect, which the Gazewood `566 device employs solely to increase the fluid pressure and the flow rate out of the venturi nozzle passages. Gazewood `566, therefore, does not address or consider the problem addressed by the present invention,

does not discuss or even hint about the continuity equation principle of fluid flow as used by the present invention, and employs an entirely different fluid flow principle to obtain a completely different result that is completely unrelated to the subject matter of the present invention.

It is, therefore, apparent that the reduction in the interior bore of the interior member of the Gazewood `566 device must be for an entirely different reason than the reduction in interior bore in the nozzle of the present invention. In this regard, it must be noted that the exterior sleeve of the Gazewood `566 device has a somewhat pointed or tapered front end, apparently to allow the device to pass through a pipeline more easily, which is the intended use of the device. This, in turn, requires that the exterior of the forward end of the inner member be somewhat pointed or tapered to provide the desired inner annular space between the inner member and the exterior sleeve in this area of the device. In addition, Gazewood `566 specifically calls for at least some of the venturi nozzle passages and corresponding throats to be angled in the forward direction to assist with removing corrosion and deposits from the interior wall of the pipeline, and thereby that at least some of the venturi nozzle passages be located in the tapered forward end of the inner member and angled forward. The design of the venturi nozzle ports, however, requires that the passages be of certain diameters and lengths in order to achieve the venturi effect which, in turn, requires that the wall of the inner member be of a certain thickness in the forward region of the inner member which, in turn, therefore requires that the inner diameter of the bore of the inner member be reduced in this area to match the reduction in outer diameter of the inner member.

The result, therefore, is that the reduction in the inner bore diameter of the inner member that has been referred to by the Examiner is readily and much more easily explained within the bounds of the teachings of Gazewood `566 rather than being misinterpreted as having any relationship to the present invention. It is, therefore, the position of the Applicant that for the above reasons, Gazewood `566 has no teachings relevant to the present invention and, in fact, teaches away from the present invention by violating the continuity equation principle employed by the present invention by employing multiple jets within a single diameter

region of the fluid bore. The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw all rejections of the claims, under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103, in view of Gazewood `566.

Now considering the combination of JP `459 in view of Gazewood `566, it is apparent from the above discussions that neither JP `459 nor Gazewood `566 has any teachings relevant to the present invention. Moreover, JP `459 is merely an example of the prior art of the type explicitly distinguished over by the present invention and the teachings of Gazewood `566 are contradictory to those of the present invention as violating the continuity equation flow principle as regards the distribution of jets in a fluid bore with regard to the interior structure of the bore.

It is, therefore, the position of the Applicant that for the above reasons JP `459 in view of Gazewood `566 has no teachings relevant to the present invention. The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw all rejections of the claims, under 35 U.S.C. § 103, in view of any permissible combination of JP `459 and Gazewood `566.

It will be noted that independent claims 7 and 16 are amended to more explicitly point out and recite these distinctions between the present invention, as recited in the claims, and the prior art cited by the Examiner. It will also be noted that these amendments to claims 7 and 16 are fully supported by the specification and claims as originally filed and thus do not add any new subject matter to the specification or claims.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the JP `459 and/or Gazewood `566 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching,

suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

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